

REMARKS

Claim 54 is cancelled; claims 38, 46, 47, 48, 50, 51 and 52 are amended; and claims 38, 42, 43 and 46-53 are pending in the application.

The specification stands objected to under 35 U.S.C. §132 as containing new matter introduced by amendment. The Examiner specifically states that material added in the previous amendment filed December 11, 2001 pertaining to crystal size is not supported by the original disclosure. Without admission as to the propriety of the Examiner's objection, the paragraph beginning at line 3 of page 8 has been amended to delete the material added in the previous response. Accordingly, Applicant respectfully requests withdrawal of the objection to the specification in the Examiner's next action.

Claims 38, 42, 43 and 46-53 stand rejected under 35 U.S.C. §112, first paragraph, as containing subject matter that was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor had possession of the claimed invention at the time the application was filed. With respect to independent claim 38, the Examiner states that the recited "crystal size in the one and the other layers being substantially the same" is not supported by the specification. Without admission as to the propriety of the Examiner's rejection, Applicant has amended claim 38 to remove the term which the Examiner finds objectionable. Accordingly, Applicant respectfully requests withdrawal of the §112 rejection from independent claim 38. The Examiner's §112 rejection pertaining to claims 42, 43 and 46-53 appears to be based on the above-discussed language of claim 38. Accordingly, Applicant's removal of such language from claim 38 is believed to also overcome the Examiner's §112 rejection

of claims 42, 43 and 46-53, and Applicant therefore requests withdrawal of such rejections in the Examiner's next action.

Applicant believes the pending claims 38,42, 43 and 46-53 to now be in condition for allowance, and Applicant therefore requests formal allowance of such claims in the Examiner's next action.

Respectfully submitted,

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Group Art Unit 2822
Examiner Rose, Kiesha L.
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Title: Capacitors and Methods of Forming Capacitors

**VERSION WITH MARKINGS TO SHOW CHANGES MADE ACCOMPANYING
RESPONSE TO SEPTEMBER 10, 2002 FINAL OFFICE ACTION**

In the Specification

The replacement specification paragraphs incorporate the following amendments. Underlines indicate insertions and ~~strikeouts~~ indicate deletions.

The paragraph beginning at line 3 on page 8 has been amended as follows:

Accordingly in the above described preferred embodiment, first layer 18 of the capacitor dielectric layer material is essentially provided with a selected finished crystalline structure prior to formation of second layer 20 thereon. Such is achieved by the crystallization or recrystallization anneal immediately prior to formation of layer 20. Also in the preferred embodiment, the final composition of second layer 20 of the first material is also desirably formed to be crystalline, although alternately such could remain amorphous if so initially deposited. In the preferred embodiment for a capacitor dielectric layer where both of layers 18 and 20 are crystalline in their final form, an interface line 19 essentially forms therebetween where such discrete layers contact (Fig. 5). Interface line 19 is characterized by a perceptible change in crystallinity from one layer to the other, such as shown or evidenced in this example by a substantial lateral shift or displacement in grain boundaries from one layer to

the other. ~~Preferably as shown in Fig. 5, crystal size in layers 18 and 20 is substantially the same in spite of the perceptible change in crystallinity, and the entire dielectric region between electrodes 16 and 22 consists essentially of layers 18 and 20.~~

In the Claims

The claims have been amended as follows. Underlines indicate insertions and ~~strikeouts~~ indicate deletions.

38. (Amended) A capacitor comprising a pair of capacitor electrodes having capacitor dielectric material therebetween comprising a composite of two immediately juxtaposed and contacting, yet discrete, layers of the same stoichiometric capacitor dielectric material, both of the discrete layers being crystalline, and comprising an interface where the discrete layers contact which is characterized by a perceptible change in crystallinity from one layer to the other, the perceptible change in crystallinity being characterized by a perceptible interface line between the two discrete layers and a perceptible lateral shift in grain boundaries from the one layer to the other, ~~crystal size in the one and the other layers being substantially the same.~~

46. (Amended) The capacitor of claim 38 constituting an entire capacitor dielectric region between the pair of capacitor electrodes, the entire capacitor dielectric region consisting essentially of the composite of the two immediately juxtaposed and contacting, yet discrete, layers of the same stoichiometric capacitor dielectric material.

47. (Amended) The capacitor of claim 42 constituting an entire capacitor dielectric region between the pair of capacitor electrodes, the entire capacitor dielectric region consisting essentially of the composite of the two immediately juxtaposed and contacting, yet discrete, layers of the same ~~stoichiometric~~ capacitor dielectric material.

48. (Amended) The capacitor of claim 43 constituting an entire capacitor dielectric region between the pair of capacitor electrodes, the entire capacitor dielectric region consisting essentially of the composite of the two immediately juxtaposed and contacting, yet discrete, layers of the same ~~stoichiometric~~ capacitor dielectric material.

50. (Amended) The capacitor of claim 49 constituting an entire capacitor dielectric region between the pair of capacitor electrodes, the entire capacitor dielectric region consisting essentially of the composite of the two immediately juxtaposed and contacting, yet discrete, layers of the same ~~stoichiometric~~ capacitor dielectric material.

51. (Amended) The capacitor of claim 38 wherein ~~the one~~ of the two ~~layers~~ layer has a thickness of from 10% to 90% of a combined thickness of ~~the first and second~~ two layers.

52. (Amended) The capacitor of claim 51 constituting an entire capacitor dielectric region between the pair of capacitor electrodes, the entire capacitor dielectric region consisting essentially of the composite of the two immediately juxtaposed and contacting, yet discrete, layers of the same stoichiometric capacitor dielectric material.

54 (deleted).

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